

What is claimed is:

1. An irrigation assembly comprising a main pipeline connected to a water supply, the pipeline being supported at intervals by mobile towers, and a plurality of collectors in fluid communication with the pipeline for receiving water from the pipeline, each collector having walls defining a water inlet and a water retaining cavity.

2. The irrigation assembly of claim 1 further comprising a plurality of drop tube assemblies attached to main pipeline and extending downwardly therefrom, the drop tube assemblies being in fluid communication with the main pipeline.

3. The irrigation assembly of claim 2 wherein the drop tube assembly comprises a drop tube attached to the main pipeline on one end, a pressure regulator on the other end of the drop tube, a nozzle attached to the downstream end of the pressure regulator, and wherein the collector is attached to one of the drop tube or the nozzle.

4. The irrigation assembly of claim 1 wherein each collector further comprises a water outlet and a valve attached to the collector, the valve being movable between a closed position in which water is prevented from flowing out the outlet and an open position in which water is permitted to flow out the outlet.

5. The irrigation assembly of claim 1 wherein the collector is pivotally mounted to the irrigation assembly about a top end of the collector.

6. The irrigation assembly of claim 5 wherein the collector top end is mounted on a spindle.

7. The irrigation assembly of claim 1 wherein the movement of the collectors over the ground defines a plurality of collector paths and further comprising a plurality of stationary targets positioned on the ground in at least one collector path.

8. The irrigation assembly of claim 7 wherein the target is a dish, each dish having an open upper end and a drain, the drain being positioned at least partially within the ground.

9. The irrigation assembly of claim 8 wherein the drain has a plurality of holes therein.

10. The irrigation assembly of claim 7 wherein each target has a valve actuator.

11. The irrigation assembly of claim 7 wherein the target is a hole.

12. The irrigation assembly of claim 7 wherein the target is a channel.

13. The irrigation assembly of claim 7 wherein the target has a mesh.

14. The irrigation assembly of claim 7 wherein the target has aggregate therein.

15. The irrigation assembly of claim 10 wherein each collector further comprises a water outlet and a valve attached to the collector, the valve being movable between a closed position in which water is prevented from flowing out the outlet and an open position in which water is permitted to flow out the outlet and wherein said valve actuator is engageable with said valve to move it to said open position to allow the water within the collector to flow into the dish.

16. The irrigation assembly of claim 8 wherein the dish forms a funnel.

17. The irrigation assembly of claim 8 wherein the dish holds approximately 3 gallons.

18. The irrigation assembly of claim 2 wherein a moisture probe assembly is mounted to the drop tube assembly to provide for testing the moisture level of the ground when the irrigation system is in use.

19. An irrigation assembly comprising a main pipeline connected to a water supply, the pipeline being supported at intervals by mobile towers, a plurality of drop tube assemblies downwardly extending from the main pipeline, a collector associated with each drop tube assembly and in fluid communication therewith for receiving water from the

pipeline, each collector having walls defining a water inlet and a water retaining cavity, the movement of the collectors over the ground defining a plurality of collector paths and a plurality of stationary targets positioned on the ground with at least one target in each collector path for receiving water from the collector.

20. The irrigation assembly of claim 19 wherein each collector further comprises a water outlet and a valve attached to the collector, the valve being movable between a closed position in which water is prevented from flowing out the outlet and an open position in which water is permitted to flow out the outlet.

21. The irrigation assembly of claim 20 wherein each collector has an open top portion, and a collector bottom portion has the valve located therein.

22. The irrigation assembly of claim 20 wherein the target is a dish, each dish having an open upper end with a valve actuator located thereon, said valve being engageable by the valve actuator to an opened position to allow the water within the collector to be received by the dish.

23. The irrigation assembly of claim 22 wherein each dish has a drain which is positioned at least partially within the ground.

24. The irrigation assembly of claim 23 wherein the dish drain has a plurality of holes located therein and positioned underground.

25. The irrigation assembly of claim 19 wherein a moisture probe assembly is mounted to the irrigation assembly.

26. A movable irrigation assembly comprising a main pipeline supported at intervals by mobile towers, a plurality of drop tube assemblies connected to the main pipeline section, a plurality of stationary targets positioned on the ground, and a plurality of moisture probe assemblies being mounted to one of said irrigation assembly and said targets for selectively testing the soil moisture level during operation thereof.

27. A method of operating an irrigation assembly of the type having a main pipeline connected to a water supply and supported at intervals by mobile towers, comprising the steps of:

positioning a plurality of collectors in fluid communication with the pipeline for receiving water from the pipeline and selectively discharging it, each collector having walls defining a water inlet, a water retaining cavity and a water outlet;

controlling at least one of the flow rate into the collector and the flow rate out of the collector such that during a first mode of operation there is a net flow into the collector;

controlling at least one of the flow rate into the collector and the flow rate out of the collector such that during a second mode of operation there is a net flow out of the collector.

28. The method of claim 27 wherein during the first mode the flow rate out of the collector is set at about zero.

29. The method of claim 27 wherein during the second mode the flow rate out of the collector is increased above the flow rate into the collector such that the collector is substantially emptied in about a minute or less.

30. The method of claim 27 further comprising the steps of positioning a plurality of stationary targets in the ground at locations over which the collectors will pass and operating in the second mode when the collectors are aligned over the targets.

31. The method of claim 27 further characterized in that in both the first and second modes the flow rate into the collector is substantially constant.

32. The method of claim 31 wherein during the first mode the flow rate out of the collector is set at about zero and wherein during the second mode the flow rate out of the collector is increased above the flow rate into the collector such that the collector is substantially emptied in about a minute or less.

33. An irrigation assembly comprising a main pipeline connected to a water supply, the pipeline being supported at intervals by mobile towers, a plurality of drop tube assemblies extending downwardly from the main pipeline, the movement of the drop tube assemblies over the ground defining paths, and a plurality of stationary troughs positioned on the ground and at least partially within the paths for receiving water from the drop tube assemblies.

34. The irrigation assembly of claim 33 wherein each trough has a plurality of underground drains at spaced locations along the trough.

35. The irrigation assembly of claim 34 wherein each underground drain has an inlet in fluid communication with the trough and at least one outlet located within the ground.

36. The irrigation assembly of claim 33 wherein the shape of each trough generally follows the path of a drop tube assembly.

37. The irrigation assembly of claim 33 wherein at least one trough has a bottom surface which is substantially planar with upwardly extending side edges.

38. The irrigation assembly of claim 33 wherein at least one trough is a pipe with a slot located in the top thereof.

39. The irrigation assembly of claim 38 wherein the slot is longitudinally positioned along the pipe.

40. The irrigation assembly of claim 38 wherein the trough further comprises a main pipe section and tributaries in fluid communication with the main pipe section, each tributary having at least one drain.

41. The irrigation assembly of claim 38 further comprising a weir mounted in the pipe.

42. The irrigation assembly of claim 33 wherein the drop tube assembly further comprises a hose having an inlet being in fluid communication with the pipeline and an outlet which directs water into the trough.

43. The irrigation assembly of claim 42 wherein at least one trough is a pipe with a slot located in the top thereof.

44. The irrigation assembly of claim 33 further comprising selected one of a weir and a dam being positioned within the trough for controlling water flow therein.